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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,932	12/08/2003	Toshimitsu Konuma	0756-7221	9654
31780	7590	03/08/2006	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			NGO, HUYEN LE	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H/A

<b>Office Action Summary</b>	<b>Application No.</b> 10/728,932	<b>Applicant(s)</b> KONUMA, TOSHIMITSU	
	<b>Examiner</b> Julie-Huyen L. Ngo	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's arguments with respect to claims 6-22 based on the Response filed on November 14, 2005 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanemoto et al. (US5250214A) in view of Ohkubo et al (US4878742).

With respect to claims 6, 10-12, 16, 17, 21 and 22, Kanemoto et al. teach (Fig. 2) forming a display device comprising:

- a pair of substrates 11/21;
- a liquid crystal layer 15 provided between said pair of substrates and comprising a nematic liquid crystal having positive dielectric anisotropy (col. 5, lines 52-56);
- a pair of orientation films 13/23 provided over adjacent to (near to) and between said pair of substrates respectively;

wherein

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- said orientation films have a surface tension of 40 dyne/cm or more (col. 26 lines 61-66);

(Claims 7, 13 and 18)

- each of said orientation films comprises a polyimide.

(Claims 9, 15 and 20)

- a first electrode provided over one of said substrates; and a second electrode provided over the other of said substrates .

However, Kanemoto et al. fail to disclose a display device having spacing between the substrates being less than 3.5  $\mu\text{m}$ ; and said pair of orientation films having antiparallel orientation directions to each other.

Ohkubo et al teach (col. 9, line 14 to col. 10, line 13) forming a display device having spacing between the pair of substrates in the range of 1.5 to 3 $\mu\text{m}$ , which is less than 3.5  $\mu\text{m}$ , for substantial extinguishment of the diffraction. The extinguishment of diffraction was uniform and no disturbance based on reverse tilt, etc. was observed.

Therefore, it would have been obvious for one having ordinary skill in the art to modify Kanemoto et al. display device with the space between the substrates being less than 3.5  $\mu\text{m}$ , and having orientation directions on said pair of orientation films being antiparallel to each other. Doing so would substantial extinguishment of the diffraction in Kanemoto et al. display device. The extinguishment of diffraction would be uniform and no disturbance based on reverse tilt, etc. will be observed, as taught by Ohkubo et al.

(Claims 8, 14 and 19)

- It is well known in the art for a display device to function as a reflective-type display device with a reflection layer on a surface of lower substrate for reflecting ambient light

Therefore, it would have been obvious for one having ordinary skill in the art to modify Kanemoto display in view of Ohkubo with a reflection layer on a surface of the lower substrate for reflecting ambient light.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Clark et al (US 5005952 A) disclose a Polarization controller comprises at least one stack of nematic liquid crystal cells arranged such that radiation incident on the stack will pass through each cell in the stack in sequence.

Katagiri et al (US 4714323 A) disclose a ferroelectric liquid crystal device having chiral smectic and nematic liquid crystal composition, and a pair of the thus rubbing-treated plastic substrate were superposed with each other so that their rubbing directions were in parallel with each other and secured to each other with a gap of 1. $\mu$ m.

***Contact Information***

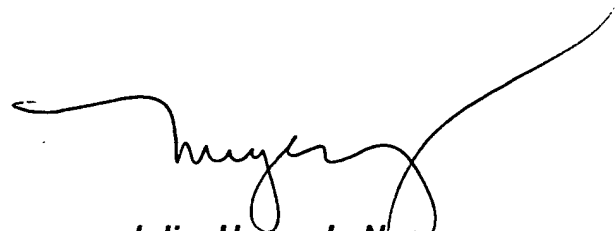
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on Monday-Thursday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Frank Font can be reached at (571) 272-2415.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 4, 2006



**Julie -Huyen L. Ngo**  
**Primary Examiner**  
Art Unit 2871